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No.

1219 line 3: after *Carolina* insert *U. S. Dept. Agric. Bur. Chem. and Soils*

1386 lines 2 and 4: for *Cystosira* and *Cystosera* read *Cystosetra*

3189 line 5: for *Gnorimoschema* read *Gnorimoschemata*

6420 should be in the section "*Mollusca*"

6431 line 7: for *Euodia* read *Evodia*

6629 should be in the subsection "*Virus Diseases*"

6828 line 5: for *Psamosolen* read *Psammosolen*

6838 should be in section "*Crustacea*"

6968 line 6: for *Atpochilus* read *Atopochilus*

Abstract
No.

7035 line 3: for *Glaucidium* read *Glaucidium*

8248 line 1: for *Haut-* read *Haut-*

8715 line 23: for *Peridiniae* read *Peridinidae*

8760 line 4: for *Illyrionthes* read *Illyrionthes*

10121 line 10: for *Calyptrocalyx* read *Calyptrocalyx*

10172 line 5: for *Hidalgo* read *Hidalgo*

10451 line 12: for *Trioxys* read *Trioxys*

10556 this abstract belongs in section "*Mollusca*"

10695 line 17: for *Antiochus VI* read *Simon Maccabaenus*

10714 line 5: for *Paphiodalum* read *Paphiodalum*

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12190 line 1: for *Horcias* read *Horcias*

12316 line 19: for *Salassiella* read *Salassiella*

12377 line 4: for *Phantoma* read *Phantoma*

13739 line 1: for *Hydrotheria* read *Hydrothyria*

14116 line 1: for *Gasterocercodes* read *Gasterocercodes*

14225 line 5: for *Nidorella* read *Nidorella*

15937 line 9: for *Achoria* read *Achroia*

15943 line 11: for *Asmaea* read *Aomaea*

17486 line 3: for *Daedalla* read *Daedalla*

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with the assistance of Sarah H. Stabler and Ruby M. Friedman.

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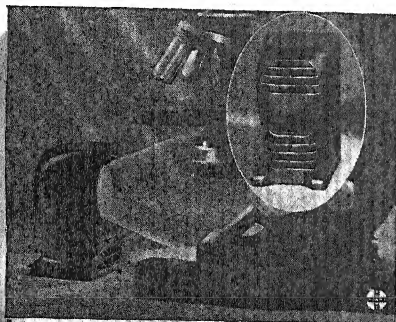


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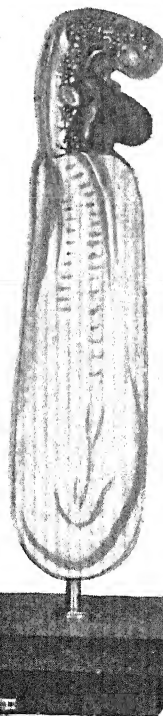
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AVES

W. L. MCATEE, *Editor*, General Ornithology

18056. BAUMGARTNER, FREDERICK M. Territory and population in the great horned owl. *Auk* 56(3): 274-282. 1939.—Field observations on the great horned owl, *Bubo virginianus*, at Lawrence, Kansas, and Ithaca, New York, demonstrated that the ♂ maintain a definite territory throughout the nesting season. This range is seldom more than $\frac{1}{2}$ mile in diam. and serves as the area in which both birds hunt for food. Resident owls are found near the nest site at all seasons of the year with the possible exception of a few months in the late summer and fall. Normally no other large species of owls are found within this territory. In optimum range the territorial requirements of the ♂ limit the density of population to 1-3 pairs to the sq. mile. The limited range of the species throughout most of the year has an important bearing upon its economic status.—*F. M. Baumgartner*.

18057. BORIES, P. Un jeune Martinet. *Oiseau* 9(1): 144-145. 1939.—A young Martin, accidentally fallen from its nest, refused to take food at first, and had to be force-fed. Later, it opened its bill for food. It was not afraid of men or dogs. The bird began to fly 12 days after being found.—*D. S. Lehrman*.

18058. CHAPIN, JAMES P. The birds of the Belgian Congo. II. *Bull. Amer. Mus. Nat. Hist.* 75(2): 1-632. 21 pl. (3 col.), 38 fig. 1939.—The present volume includes the families Rallidae to Picidae. For each species synonymy, description, and distribution are given. Keys to the larger genera are provided.

18059. DEVITT, OTTO E. The Yellow Rail breeding in Ontario. *Auk* 56(3): 238-243. 1 pl. 1939.—The Yellow Rail (*Coturnicops noveboracensis*) was found widely distributed throughout the province of Ontario, occurring in suitable marshes from Lake St. Clair on the south to James Bay. While heard occasionally during the daytime, it became much more active just after sunset. The "voice" period extended at least from May 25 to July 27. A nest containing 7 eggs was found at Holland River Marsh, Simcoe County, on June 12, 1938, and is the first reported from Canada.—*O. E. Devitt*.

18060. FLEMING, C. A. Birds of Chatham Islands. 3. The shore plover. *Emu* 39(1): 1-15. 6 pl. (1 col.) 1939.—*Thinornis novae-seelandiae* has been recorded from many localities throughout the main islands of New Zealand, although never in large numbers; in 1838 apparently its extinction on the mainland had already begun, and in no subsequent writing is there an account of its occurrence. So complete and so early was this extinction brought about that it is difficult if not impossible to locate, in New Zealand collections, specimens from mainland localities. In view of the large number of shore plover on South East Island it is surprising that no colonization of the nearby parts of Pitt Island has occurred. At present the shore plover may be considered as being confined to South East Island. The courtship habits of the species follow the pattern of behavior common to many waders; a few of these traits are descr. All but one of the 17 nests examined were in some way sheltered from above and entered from the sides, and contained 2 or 3 eggs. General observations, sexual differences in plumage, construction of nest, coloration of eggs, young, and ecological factors descr.—*P. A. Gilbert*.

18061. FRIEDMANN, H., and H. G. DEIGNAN. Notes on

some Asiatic owls of the genus *Otus*, with description of a new form. *Jour. Washington Acad. Sci.* 29(7): 287-291. 1939.—*O. senegalensis* distans, from northern Siam, related to African *O. senegalensis*; critical discussion of Asiatic forms of *O. scops*, *O. spilocephalus*, and *O. bakkamoena*.—*H. Friedmann*.

18062. GILBERT, P. A. The bower-painting habit of the satin bower-bird, *Ptilonorhynchus violaceus*. *Emu* 39(1): 18-22. 2 pl. 1939.—The remarkable habit of painting the sticks of the bower with fruit pulp is descr. Two fruits are specially used, the blueberry and *Dianella* berry. The methods adopted by the ♂ satin bower-bird in applying fruit pulp to the walls of its bower indicate deliberation. An immature ♂ and a ♀ also were observed to paint.—*P. A. Gilbert*.

18063. GROMIER, E. Quelques observations ornithologiques. *Oiseau* 9(1): 142-143. 1 fig. 1939.—Note of the finding of a nest of the yellow bunting (*Emberiza citrinella*), made of paper.—*D. S. Lehrman*.

18064. HALLER, L. Beobachtungen an der Tihanyer Kolonie des Fischreiher (Ardea c. cinerea L.). *Arb. Ungarisch. Biol. Forschungsinst.* 10: 45-51. 1938.

18065. HELLMAYR, CHARLES E. Catalogue of birds of the Americas and the adjacent islands. XI. Ploceidae-Catamblyrhynchidae-Fringillidae. *Field Mus. Nat. Hist. Publ.* 430. 13(6): 1-662. 1938.—This catalog of the family of the finches concludes the treatment of the American Passeriformes in the Field Museum series. Scientific and common names, synonymy, bibliographic references, geographic ranges, and localities of the specimens in the Field Museum are given for spp. and sspp. recognized by the author, with taxonomic descriptions in some cases. 110 genera are listed. Index. Fringillidae: *Sporophila nigricollis* vinda nom. nov. p.209.—*S. H. S.*

18066. HINDWOOD, K. A. Nectar-feeding birds near Sydney. *Emu* 39(1): 40-44. 1 pl. 1939.—An annotated list of birds, chiefly honeyeaters and parrots, mostly observed feeding on the blossoms of the genus *Eucalyptus*.—*P. A. Gilbert*.

18067. HOMONNAY, N. Die Vögel der Halbinsel Tihany, unter besonderer Berücksichtigung der sich durch den natürlichen Aufbau der Halbinsel ergebenden Lebensräume der Vögel. *Arb. Ungarisch. Biol. Forschungsinst.* 10: 52-83. 1938.—On the basis of the breeding and feeding places of the birds, the Tihany peninsula is divided into 12 so-called bird-biochors. Each of these is composed of the various biotops of the birds. The breeding places of the various species are called their primary biotops, whereas the feeding places are the secondary ones. Each species may have several primary and secondary biotops of different importance and they may even occupy different biochors. The number of bird species observed in the peninsula was 168, of which 56 were observed breeding there.—*A. Wolsky*.

18068. HURSTHOUSE, E. W. Some observations on the breeding habits of the little penguin. *Emu* 39(1): 15-17. 1939.—The period of incubation was 38 days, shared by both parents. Young, methods of feeding, molt, and other aspects are dealt with, followed by a brief summary of dates and events.—*P. A. Gilbert*.

18069. KLEINER, A. On the importance of biotops in the bird-migration. (Observations at the waters of Trans-

danubia, Hungary.) *Arb. Ungarisch. Biol. Forschungsinst.* 10: 84-92. 1938.—Most of the water-birds insist on certain biotops, even in migration. Thus water-birds and shore-birds seem to migrate along rivers, as has been observed regularly in Gönyű on the Danube and occasionally in Szentendre, Budapest and Ercsi, also on the same river. Thus the river seems to constitute a directive path of bird-migration.—A. Wolsky.

18070. LACK, DAVID. The behaviour of the robin. *Proc. Zool. Soc. London Ser. A.* 109(3): 169-219. 1939.—The elicitation of aggressive behavior in the robin is correlated with at least 4 elements in the external situation (flying-away movement, robin-shape, red breast, song), each of which tends to be associated, but not exclusively, with a particular motor behavior (pursuit-flight, striking, posturing, song). The internal state promoting aggressive behavior also seems complex.—W. E. Collinge.

18071. LEWIS, F. The breeding habits of the lowan in Victoria. *Emu* 39(1): 56-62. 1939.—A careful study of the lowan or mallee fowl, *Leipoa ocellata*, during recent years indicates that much of the usually-accepted doctrine regarding its nesting habits is faulty. The eggs when deposited in the mound always stand on the small end. Records of mound temps. and other data are valuable additions to our knowledge of the bird's life history.—P. A. Gilbert.

18072. LINDSEY, ALTON A. Food of the starling in central New York State. *Wilson Bull.* 51(3): 176-182. 1 fig. 1939.—Insects constituted 35% of the food in 661 adult (and independent young) starling stomachs, and 77% of that in 139 nestling stomachs. Vegetable matter makes up 41% in adults and 5% in nestlings, while mineral items are 0.8% and 2.2%, respectively. The remainder of the food in each case is animal matter other than insects, including millipedes, unidentified items, and animal garbage. The food habits are decidedly beneficial, especially those of nestlings.—A. A. Lindsey.

18073. LOWE, PERCY R. On the systematic position of swifts (sub-order Cypseli) and humming birds (sub-order Trochili), with special reference to their relation to the order Passeriformes. *Trans. Zool. Soc. London* 24(4): 307-348. 4 pl., 1 fig. 1939.—A series of valuable and informative notes in an attempt to once and for all establish the position held by the swifts and humming-birds in the class Aves.—W. E. Collinge.

18074. MOREAU, R. E. Numerical data on African birds' behaviour at the nest: *Hirundo s. smithii* Leach, the wire-tailed swallow. *Proc. Zool. Soc. London Ser. A.* 109(2): 109-125. 1939.—The effect of rain on parent birds' activity is given. Heavy rain reduced feeding activity. Brooding of eggs and young was carried out by the ♀♀. Incubation period is 14 days; fledging 18-21.—W. E. Collinge.

18075. NICE, MARGARET MORSE. Symposium on the individual vs. the species. 3. The Social Kumpan and the Song Sparrow. *Auk* 56(3): 255-262. 1939.—Social reactions of *Melospiza melodia* are considered from the viewpoint of Konrad Lorenz' Kumpan theory. This bird reacts to its companions through suggestion or so-called imitation, responds to warning, and exhibits despotism which is held in check in the breeding season through the factor of territory.—M. M. Nice.

18076. NOBLE, G. K. Symposium on the individual vs. the species. 4. The rôle of dominance in the social life of birds. *Auk* 56(3): 263-273. 1939.—There are 2 sharply defined types of dominance in birds: social and sexual. Sexual dominance has the same function in fish and birds. It calls forth posturing or other sexual attitudes. Territory may be sharply divided into different categories. Sexual territory, which is so characteristic of most birds, is, however, found in most egg-laying and nest-building vertebrates. It arises from the sexual interest of the animal in an area suitable for nesting and it functions primarily to test sexual readiness of the opposite sex and to make possible the formation of sexual bonds. Sexual territory is not to be confused with a nesting territory, which has a different motivational basis, nor with an isolated retreat which is defended by many vertebrates against intruders at any season.—G. K. Noble.

18077. NUBLING, E. The painting of the satin bowerbird's bower. *Emu* 39(1): 22-31. 1939.—An exhaustive ac-

count giving details of individual bowers. The first detailed account of this extraordinary habit appeared in the *American Journal of Ophthalmology*, 8(2), February, 1925. The author modifies certain statements contained in that article.—P. A. Gilbert.

18078. POLDERBOER, EMMETT B. The summer habits of the ruffed grouse in Iowa. *Iowa Bird Life* 9(3): 38-41. 1 fig. 1939.—Largely devoted to a study of the type of cover used during the July and Aug. moulting season during which the birds are flightless.—A. L. Pickens.

18079. ROSENE, WALTER Jr. A preliminary investigation of the food habits of the mourning dove in Alabama. *U. S. Dept. Agric. Bur. Biol. Surv. Wildlife Res. and Manag. Leaf.* BS-133. 10p. 1939.—In the 287 mourning dove (*Zenaidura macroura*) stomachs examined, 149 spp. of vegetable food representing 41 plant families were identified, all but 3 families providing food in quantities sufficient to be recorded as one per cent or more of the bird's annual diet in Alabama. More than 99% of the food consisted of seeds. Animal food was insignificant and was probably taken accidentally. The grasses were the most important family as a source of food, the cultivated vars.—corn, wheat, and Johnson grass—ranking first as a group. The most important single native food was seeds of bull paspalum (*Paspalum boscianum*). Those of crowfoot grass (*Dactyloctenium aegyptium*) and crabgrass (*Digitaria sanguinalis*) also were important. Other seeds of importance in the diet were those of pokeweed (*Phytolacca americana*), chickweed (*Alsine media*), wild legumes (*Galactia* and *Strophostyles*), cowpeas (*Vigna sinensis*), lespedezas (*Lespedeza*), dovewoods (*Croton*), evening-primrose (*Raimannia laciniata*), and ragweeds (*Ambrosia*). A shortage of choice foods apparently occurred in April and May. Preferred feeding places were on bare ground in open situations. The birds were found to concentrate around an abundant food supply. Preferred drinking places were at "watering holes" that had gently sloping banks, devoid of vegetation.—Auth. sum.

18080. SALGUES, R. Contributions nouvelles à la physiologie de la plume. G. La morphologie de la plume comme élément taxinomique. *Oiseau* 9(1): 51-57. 1939.—(After Chandler, U. of Calif. Pub. in Zool., 13, no. 11: 243-446, 1916.) Feather structure is a valuable taxonomic character. Distribution of plumules is not of much value, due to its variation, and to the adaptive value of the plumules. The presence and form of the hyporachis is a very significant character. The quill is not a dependable character due to its adaptiveness. The barb is a valuable character. The morphology and arrangement of the distal barbs of the flight-feathers is the best taxonomic feather-character. Contour feathers and down-barbs are not good taxonomic characters, except that the length, dimensions, and shape of the base of some of the down-barbs have phylogenetic significance. No single character can suffice as a basis of taxonomy. Evidence from the feathers leads to the following conclusions: the Procellariiformes are closely related to the Ciconiiformes; *Plotus* and *Phalacrocorax* should be in separate families; the Phoenicopteriformes are intermediate between Ciconiidae and Anseres; the Phaethontidae are closer to the Laridae than to the Steganopodidae; the Alcidae are close to the Laridae, but show some similarity to the Colymbiformes; the Gruiformes (particularly Rallidae and Aramidae) are closer to Limicolae than to Ciconiiformes; *Eurypyga* and *Cariama* are probably aberrant Ardeae; *Cursorius* is nearer to Ardeae than to Limicolae; the Pteroclo-Columbae are closer to the gallinaceous birds than to the laro-limicolines; the Tinamidae are an offshoot of the Galliformes; the Cuculiformes do not differ from Coraciiformes sufficiently to form a separate order; the Trochilidae and Pici are closer to the Passeriformes than to the Coraciiformes; the Galbulidae are not descended from Pici.—D. S. Lehrman.

18081. TICEHURST, CLAUD B. A systematic review of the genus *Phylloscopus*. (Willow-warblers or leaf-warblers.) With preface by MARTIN A. C. HINTON. viii+193p. 8 maps, 2 col. pl. Printed by order of the trustees of the British Museum: London, 1938, Pr. 10s.—This monograph is based on the collections of the British and other museums numbering 5,000 specimens and on field

experience. *Phylloscopus* has its present headquarters in the mountain ranges from Kashmir to Ransu with outlying species in Western Asia, Europe, Indo-China, and the Sunda Islands. The author recognizes 28 spp. and 53 subsp. Of these he gives a key and a systematic review and for each of them a detailed account including a terse description of the adult, molts and plumage, measurements, weights, wing formula, soft parts, breeding range, migration, winter range, comparisons with related forms in field and museum, and citations of pertinent literature. The author tends to reduce the number of genera by reducing to synonymy those founded on degrees of difference. He finds subspecies living side by side on the same ground. He notes parallel variations in allied species in comparable ranges. The book is a comprehensive, adequate, and well-considered monograph based on ample material and long experience in its analysis, with significant generalizations.—*C. A. Kofoed.*

18082. WHITLOCK, F. L. Birds of the Bunbury district, western Australia. *Emu* 39(1): 47-56. 1939.—An annotated list of birds based on observations over 10 yrs. or more.—*P. A. Gilbert.*

18083. WRIGHT, EARL G. Marking birds by imping feathers. *Jour. Wildlife Management* 3(3): 238-239. 1 fig. 1939.—Feathers of any color can be firmly attached to bases

of natural feathers by splicing with metal reinforcement.—*W. L. McAtee.*

18084. WYNNE-EDWARDS, V. C. Intermittent breeding of the Fulmar (*Fulmarus glacialis* (L.)) with some general observations on non-breeding in sea-birds. *Proc. Zool. Soc. London Ser. A.* 109(2): 127-132. 1 pl. 1939.—There is a large non-breeding population of Fulmars and other Procellariiform birds, which suggests that they do not breed annually. In non-breeding Fulmars obtained in northern Labrador in July the length of the middle claws varied from 16 to 10.6 mm., due to wear. As pelagic birds, can only wear down their claws when breeding, this observation strongly suggests a non-breeding population of mixed age-groups. Ovaries from 4 representative non-breeding ♀♀ were sectioned, and histological confirmation obtained of the relation of claw-length to age. Resorbed remnants of ovulated follicles prove that all these birds had bred in one or many previous years, and thus that their reproduction is intermittent. A case of follicular atresia accompanied by the extrusion of yolk into the stroma is figured. When breeding is inhibited in the Fulmar and certain other birds the annual (post-nuptial) moult occurs prematurely. A short discussion is given of other effects of inhibited breeding in marine birds.—*W. E. Collinge.*

MAMMALIA

Editor: GERRIT S. MILLER. Associate Editor: REMINGTON KELLOGG

18085. ALLEN, GLOVER M. Dog skulls from Uyak Bay, Kodiak Island. *Jour. Mammal.* 20(3): 336-340. 1939.—From an aboriginal site of 4 acres, covered by a deposit believed to date from about the beginning of the Christian era to about the time of Russian occupation (1783), some 30 crania and mandibles were recovered during the excavations under Dr. Ales Hrdlička, representing 2 distinct breeds of dogs, a larger about the size of the Eskimo dog of Greenland, but with a more pinched-in rostrum, and a much smaller breed about the size of a spaniel but differing from most smaller types of dogs in the flatter forehead and nearly complete lack of swellings due to sinusal inflation of the portion between postorbital processes and braincase. A few skulls probably represent mongrels of these two, with disharmonic proportions. Measurements of 29 skulls of this lot are given.—*G. M. Allen.*

18086. BAILEY, VERNON. The solitary lives of two little pocket mice. *Jour. Mammal.* 20(3): 325-328. 1939.—These smallest known pocket mice (*Perognathus pacificus*) are fairly abundant in the sandy shores and dunes near the ocean in San Diego Co., southern California, but have not been found in the heavy soils a little back from the beaches. A ♂ and ♀ were captured near Oceanside in 1931 and kept for study until they died of old age, the ♀ in 1935 and the ♂ in 1937. They were fully adult when captured and must have been at least 5 and 7 years old when they died. Their habits in the field and in captivity were mainly solitary as in most animals that store food, the ♀ being aggressively acquisitive, though both were gentle and friendly with people. Their food consisted of a great variety of seeds of native and cultivated plants of which the families Compositae, Leguminosae and Gramineae furnished the staples. They drank water irregularly but became very thirsty if without water or green food for a few days.—*V. Bailey.*

18087. BEACH, FRANK A. Maternal behavior of the pouchless marsupial, *Marmosa cinerea*. *Jour. Mammal.* 20(3): 315-322. 3 fig. 1939.—A lactating opossum exhibited maternal reactions comparable to those of the parturient rat; she gathered available material to build a nest, and retrieved her scattered young by pushing them under her belly where they could seize the ventral hair and cling to the mammae. Her reactions to the newborn rats were indistinguishable from her responses to her own young; but the rats failed to seize her coat and consequently were not retrieved. Young rats left in the exptl. cage over night were found in her nest box the following morning.—*F. A. Beach.*

18088. BENSON, SETH B., and RICHARD M. BOND. Notes on *Sorex merriami* Dobson. *Jour. Mammal.* 20(3):

348-351. 1939.—This shrew occurs in California. It intergrades with *S. leucogenys*, thus reducing *leucogenys* to the rank of a subspecies of *S. merriami*.—*S. B. Benson.*

18089. CARR, A. F. Jr. Notes on escape behavior in the Florida marsh rabbit. *Jour. Mammal.* 20(3): 322-325. 1939.—Observations on some 200 chases of a small number of Florida marsh rabbits (*Sylvilagus palustris paludicola*) by hounds, in the same area near Newnan's Lake, Florida, in which Blair's 1936 study of the Florida marsh rabbit was made, show that (1) the pursued rabbits are unhurried, moving with a short hop, and often back-tracking or "freezing," allowing the hounds to overrun the trail; (2) what are believed to be single individuals with some regularity follow predictable courses leading to preselected refuges, but the routes taken are not invariable.—*T. H. Hubbell.*

18090. COTTAM, CLARENCE, A. L. NELSON, and TALBOT E. CLARKE. Notes on early winter food habits of the black bear in George Washington National Forest. *Jour. Mammal.* 20(3): 310-314. 1939.—A discussion of early winter food habits of black bears in George Washington National Forest, Virginia and West Virginia, based on examination of the stomach contents of 25 animals. Acorns and fruits of *Vaccinium*, tupelo (*Nyssa sylvatica*), grape, chokeberry (*Aronia melanocarpa*) and greenbrier (*Smilax*) were found to be the chief items of food. During the early winter, only 3½% of the food consumed was of animal material. During years of acorn failure the bears are forced to feed on fruits to a much greater extent than usual.—*A. L. Nelson.*

18091. DEARBORN, NED. Sections aid in identifying hair. *Jour. Mammal.* 20(3): 346-348. 1939.—Cross sections of mammal guard hairs, made where the hairs are broadest, are frequently distinctive of a family, or even a genus. The medullary pattern and the maximum size of a guard hair are also more or less diagnostic, when taken in connection with cross sections. These features are useful in identifying small mammal hairs found in stomachs and excreta of predators.—*N. Dearborn.*

18092. FOX, E. H. Some notes on rat control in the Mourilyan area. *Queensland Soc. Sugar Cane Technol. Proc.* 8: 37-39. 1937.—Over 90% of the field rats in the Mourilyan area of Queensland belong to the species *Melomys littoralis*.—*Courtesy Exp. Sta. Rec.*

18093. FRY, DONALD H. Jr. A winter influx of sea lions from Lower California. *California Fish and Game* 25(3): 245-250. 3 fig. 1939.—Sea lions can be counted most easily and accurately during the breeding season (early summer); therefore all previous counts in California were made at that time. To check the possibility of a winter influx of sea

lions from Mexican waters, a count was made in early March, 1939. Approximately twice as many California sea lions (*Zalophus californianus*) were found as on summer counts.—D. H. Fry, Jr.

18094. GAZIN, C. LEWIS. A further contribution to the Dragon Paleocene fauna of central Utah. *Jour. Washington Acad. Sci.* 29(7): 273-286. 10 fig. 1939.—A description of the fossil mammalian remains collected from the Dragon Paleocene deposits in central Utah by the 1938 Smithsonian Institution expedition in search of fossil vertebrates. The fossil localities are in or near Dragon Canyon in the western part of Emery County. The fauna now includes about 19 mammalian forms of which 9 are recognized as new species. Three new genera are proposed as follows: *CONORYCTELLA* (Taeniodonta); *DRACOCCLAENUS* and *JEPSANIA* (Condylarthra). New species are described in *Catopsalis*, *Conoryctella*, *Anisonchus*, *Haplocomus*, *Dracoclaenus*, *Ellipsodon*, and *Jepsenia*.—C. L. Gazin.

18095. GOLDMAN, E. A. A new badger from Sonora. *Jour. Washington Acad. Sci.* 29(7): 300-301. 1939.—*Taxidea taxus sonoriensis*.—E. A. Goldman.

18096. GOLDMAN, E. A. Nine new mammals from islands in Great Salt Lake, Utah. *Jour. Mammal.* 20(3): 351-357. 1939.—New subsp. in *Perognathus* (1), *Dipodomys* (3). *Onychomys* (1), *Reithrodontomys* (1), *Peromyscus* (2), and *Neotoma* (1).

18097. GREGORY, JOSEPH T. Two new camels from the late Lower Pliocene of South Dakota. *Jour. Mammal.* 20(3): 366-368. 1 fig. 1939.—*Planchenia magnifontis* and *Procamelus grandis*.

18098. HAMILTON, W. J. Jr. Activity of Brewer's mole (*Parascalops breweri*). *Jour. Mammal.* 20(3): 307-310. 1939.—In studies conducted in eastern New York during the summers of 1937 and 1938, surface burrows were marked by pressing in the roof of mole tunnels; observations on the time at which 973 repairs were made through the 24-hour period suggest that these moles are more active by day than at night. Records of 1383 repairs between 6 a.m. and 6 p.m. do not show rhythmic activity as is manifested in *Microtus* and *Peromyscus*.—W. J. Hamilton, Jr.

18099. HAMLETT, G. W. D. Identity of *Dasypus septemcinctus* Linnaeus with notes on some related species. *Jour. Mammal.* 20(3): 328-336. 1 fig. 1939.—The Linnaean species *D. septemcinctus* is identical with a small, widely distributed Brazilian armadillo that has been described under various other names. *D. hybridus*, of Argentina, is a distinct species. A key to the genus and condensed synonymies are given.—G. W. D. Hamlett.

18100. HOWELL, ARTHUR H. Description of five new mammals from Florida. *Jour. Mammal.* 20(3): 363-365. 1939.—New subsp. in *Scalopus* (1), *Peromyscus* (3), and *Sylvilagus* (1).

18101. HUESTIS, R. R. Crater Lake *Peromyscus*. *Jour. Mammal.* 20(3): 341-345. Map, 1939.—Mice taken on the Cascade Divide at Crater Lake are intermediate between *Peromyscus maniculatus rubidus* and *P. m. gambeli* in pelage characters based on hair count. In mean relative tail length the Cascade Divide sample lies between the means for this character in the *rubidus* and *gambeli* series used for comparison but is much nearer the latter race. In foot and ear length Cascade Divide mice are indistinguishable from *gambeli* and only slightly different from *rubidus*. The point of intergradation is different in the various characters used by taxonomists to separate geographic races. With the exception of a small difference in relative tail length *Peromyscus* taken at 3 points in Crater Lake National Park are similar to one another.—Auth. summ.

18102. HUEY, LAURENCE M. A new *Perognathus* arenarius from near the U. S.-Mexican boundary in Lower California. *Trans. San Diego Soc. Nat. Hist.* 9(13): 57-58. 1939.—*P. arenarius mexicanus*, northern Lower California, Mexico.—L. M. Huey.

18103. HUEY, LAURENCE M. The silky pocket mice of southern California and northern Lower California, Mexico, with the description of a new race. *Trans. San Diego Soc. Nat. Hist.* 9(11): 47-54. Map, 1939.—Reviews the small silky pocket mice in southern California (south of the Sierra Madre range) and northern Lower California, Mexico.

Perognathus longimembris internationalis, Lower California side of International Boundary at Jacumba, San Diego County, California. *P. l. cantwelli* is reduced to synonymy with *P. l. pacificus*.—L. M. Huey.

18104. HUEY, LAURENCE M. A new silky pocket mouse from southwestern Utah. *Trans. San Diego Soc. Nat. Hist.* 9(12): 55-56. 1939.—*Perognathus longimembris virginis*, Washington County, Utah.

18105. MILLER, GERRIT S. Jr., et al. Note on the lectotype of *Lasiurus semotus* (H. Allen). *Jour. Mammal.* 20(3): 369-382. 1 fig. 1939.—Note on the lectotype of *Lasiurus semotus* (H. Allen), by GERRIT S. MILLER, JR.; Notes on the sex ratio in *Nycticeius humeralis*, by EMMET T. HOOPER; The leconte free-tailed bat *Tadarida cynocephala* in Alabama, by FRED S. BARKALOW, JR.; Notes on an otter fishing, by LAURENCE H. SMITH; Swimming power of the Canadian otter, by W. E. SCOTT; Sea otters and abalones, by JOHN E. CUSHING, JR.; Coyotes prey on goats, by ALBERT C. HAWBRECKER; Dental anomaly in an Eskimo dog, by GLOVER M. ALLEN; A weasel [*Mustela frenata novboracensis*] trails a rabbit [*Sylvilagus* sp.], by EDWARD ADDY; Badgers in northeastern Missouri and southeastern Iowa, by RUDOLF BENNITT; Climbing ability of the northeastern chipmunk, by NORMAN A. PREBLE; Observations on red squirrel [*Tamiasciurus hudsonicus*] travel in treadmill, by ADRIAN C. FOX; Occurrence of the bushy-tailed woodrat (*Neotoma cinerea*) at Fresno, California, by DOUGLASS H. HUBBARD; A swimming and diving meadow vole (*Microtus pennsylvanicus pennsylvanicus*), by W. FRANK BLAIR; Meadow mouse (*Microtus pennsylvanicus*) trapped by plant stalks, by C. HAVEN KOLB; Northern pine mouse (*Pitymys pinetorum*) in Minnesota, by DONALD M. HATFIELD; Notes on the house mice of California, by DAVID G. NICHOLS; The dusky pocket mouse (*Perognathus flavescens perniger* Osgood) in Iowa, by EDSON FICHTER; Re-assimilation of food by the banner-tail kangaroo rats (*Dipodomys spectabilis baileyi*), by F. W. MILLER; Attacks on porcupine by gray fox (*Urocyon cinereoargenteus*) and wildcats (*Lynx rufus*), by RICHARD LEE WEAVER; Notes on the Sierra Nevada flying squirrel (*Glaucomys sabrinus lascivus*), by VINCENT MOWBRAY; The hand capture of conies (*Ochotona*), by F. W. MILLER, and Highway mortality of rabbits in Idaho (Anonymous).

18106. SHADLE, ALBERT R., and THOMAS S. AUSTIN. Fifteen months of beaver work in Allegany State Park, N. Y. *Jour. Mammal.* 20(3): 299-303. 1 fig. 1939.—In one year 2 adult beavers cut 116 trees from 1 to 13 inches in diam., built 705 feet of dam, and constructed a house of 472 cu. ft. volume. From Aug. 11, to Nov. 11, 1938, the adults and 2 kits cut 150 trees 1 to 15 inches in diam., added 150 feet of dam, besides raising other dams, increased the volume of the house from 472 cu. ft. to 940 cu. ft., collected and stored a pile of winter food 30 feet long, 8 ft. wide and 3 to 4 feet deep. The order of food preference was: *Populus*, *Salix*, *Amelanchier*, *Carpinus*, and *Prunus*.—A. R. Shadle.

18107. WARREN, EDWARD R., and E. RAYMOND HALL. A new subspecies of beaver from Colorado. *Jour. Mammal.* 20(3): 358-362. Map, 1939.—*Castor canadensis concisor* is described; Monument Creek, El Paso County, Colorado, is the type locality.—E. R. Hall.

18108. WOOD, ALBERT ELMER. Additional specimens of the heteromyid rodent *Heliscomys* from the Oligocene of Nebraska. *Amer. Jour. Sci.* 237(8): 550-561. 2 pl. 1939.—A collection of specimens of *Heliscomys* from the Upper Oread Beds of western Nebraska adds considerably to our knowledge of this rodent. Associated upper and lower teeth, complete upper and lower dentitions, fragments of the skull, a partial radius and a partial manus, all referable to *H. hatcheri*, make this the best known species of the genus. This species shows strong resemblances to the early members of the Heteromyinae, to which it is tentatively referred, although all the other species of the genus are referable either to the Perognathinae or to the Dipodominae. This material throws no light on the origin either of the *Heliscomys* tooth pattern, or on that of the Geomyoidea in general.—A. E. Wood.

INTRODUCTORY GUIDE TO THE INDEXES

Users of Biological Abstracts are reminded that this volume covers only a part of the literature published in the period during which the volume was issued. Succeeding volumes must therefore also be consulted for literature more or less contemporaneous with that reported and indexed in this volume.

SUBJECT AND SYSTEMATIC INDEXES

GENERAL

These indexes are designed to meet the needs both of those whose interests lie chiefly in systematic groups of organisms and of those whose interests are not circumscribed in this way. For the former, chiefly systematic biologists, one of the requisite avenues of approach to their subject is by systematic groups; this is provided by the systematic index. Experience has shown that the needs of those concerned with other biological disciplines are most practically met by a detailed analytical subject index alphabetically arranged; an extensive index of this type is therefore provided.

A special effort has been made to design these two indexes as far as possible in such a way that they will complement rather than duplicate each other. Certain departures from standard indexes will therefore be noted. Chief among these is the policy in the systematic index of carrying the indexing only to genera, not to species.

This arrangement will be convenient for systematists as well, especially when seeking information concerning a limited number of given genera; under these circumstances the subject index will be found the more satisfactory, making consultation of the systematic index in such cases unnecessary. When, however, more comprehensive and extended systematic orientation is desired, the systematic index provides a complete condensed approach by groups and their subgroups down to and including genera.

THE SUBJECT INDEX

(p. 1894 to end)

This index is based upon an analysis of the abstract, not merely the title.

The words, terms, and expressions currently used for the same or closely related subjects vary greatly. If the indexing is done according to the particular words used by authors, much scattering of material concerning the same subject obviously results. Therefore the effort has been to index subjects and not merely words, and, where necessary, provide cross references which will lead the user from words commonly used to the rubrics under which the pertinent material has been assembled. Thus, studies on blood sugar are indexed under that rubric, not under "Hypoglycemia," "Hyperglycemia," or other terms used by authors to denote variations in blood sugar; because of their frequent use, however, "Hypoglycemia," "Hyperglycemia," etc., are entered in their respective alphabetic positions with cross references to "Blood sugar." Similarly, word indexing frequently scatters material referring to the same species; thus, material concerning the domestic fowl would appear under such diverse rubrics as hen, cock, pullet, capon, fowl, chicken, chick, etc.

While an effort has been made through subject indexing to avoid in a large measure the scattering resulting from word indexing, the index is, in the main, not a classified one. Since ease of use rather than strict logic is demanded of an index, the indexing so far as possible is done under the rubrics under which it is thought the majority of users are most likely to search. To this extent the index is

frankly opportunistic. Thus the index contains rubrics for "Antibodies," "Antigens," "Complement," "Toxins," "Vaccines," etc., instead of relegating all to subordinate positions under some general rubric, *e.g.*, "Immunity." Since individual researches tend to be highly specialized, this general policy is believed to result usually in greater convenience to investigators.

This policy necessarily places closely related subjects in more or less widely separated alphabetical positions, and since the index should be useful not only to the specialist but also to those who wish a more comprehensive orientation in a wider field, cross references have been liberally employed to lead users to related material. Also, when the nature of the material has made it possible, the information has not only been entered under, for instance, the specific name of the substance, but has been listed again under the class or group to which it belongs. For example, the papers which deal with cyanides as fumigants appear with detailed entries under "Cyanides," as: "Cyanides, as fumigants, in black scale control, . . . 14980," and are listed again, by number only, under "Fumigants," as: "Fumigants, cyanides as, . . . 14980." Similarly, papers on specific stains are entered in detail under the name of the stain, *e.g.*, "Methylene blue," etc., and listed again by number only under "Stains." Cyanides and methylene blue cannot, however, be made exclusively subrubrics of "Fumigants" and "Stains," respectively, because of their importance in other directions.

There are some cases, however, in which there seems to be no necessity for thus scattering related material; especially in cases where there is an anatomical basis for grouping, material has been entered only under the larger group heading. Thus the bones, muscles, nerves, and the various parts of the brain are listed under "Bone," "Muscle," "Nerve," "Brain," rather than under "Ulna," "Sartorius," "Phrenic," "Amygdala," "Restiform body," etc.

Under very broad rubrics only those papers are in general indexed which themselves are broad in content or point of view. Thus, under "Physiology," "Pathology," "Cytology," "Horticulture," "Ecology," etc., will usually be found indexed only books or other general treatments; to do otherwise would make these headings unwieldy and more or less coextensive with the corresponding abstract sections.

Indexing under names of organisms

In general, indexing is done under the scientific name used in the original; *i.e.*, no attempt is made to select the name that might be considered correct under the rules where two or more names are in current use. This results in some scattering of references pertaining to the same organism, notably among bacteria, where several systems of nomenclature are current. However, specialists will know what names to consult in such cases; also, a limited amount of cross referencing is provided.

When common names only are used in the original, the indexing as a rule is done under these; allocation to genera would in many cases be difficult and introduce errors. Thus, if merely "Clover" appears in the original, it

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is indexed under that name rather than under the genus *Trifolium*, since the plant in question may belong to some other of the several genera members of which are known as "Clovers." Where, however, there is no room for doubt as to the proper scientific name of an organism or group mentioned only by common name in the original, indexing may be done under the scientific name. Between common names and their possible, probable, or certain corresponding generic names, cross references have been provided in a limited number of cases.

Since the same generic name is sometimes used for both plants and animals, the alphabetical arrangement used in the subject index throws these together. In most cases these have been separated. Occasionally, however, the species listed under a generic name will be in part animal and in part plant; reference to the corresponding abstracts at once distinguishes between them.

Studies, especially experimental, on common laboratory animals (guinea pig, mouse, rat, rabbit, dog, cat, etc.) are in general not indexed under the name of the animal; the same applies to man, especially in the fields of physiology, pathology, and anatomy.

In view of the extensive systematic index, the indexing in the subject index is usually not done under group names above the rank of genus. Occasionally it appears desirable to insert references under larger group names, often in anglicized form, e.g., "Diatoms," "Fishes," etc. However, every supergeneric group recognized and represented in the systematic index appears in the subject index in Roman type; the page number following refers to the page of the systematic index on which the group is treated, and the exponential figure attached to the page number refers to the column.

Similarly, the page and column references appearing after generic names refer to the exact places in the systematic index where these genera are treated systematically. *It is thus possible to determine instantly the classification of any genus occurring in the alphabetical subject index which appears also in the systematic index.* For example, the genus *Anopheles* in the alphabetic subject index is followed by "(p. 1877)"; reference to this page and column in the systematic index discloses that the genus falls in the family Culicidae, order Diptera, class Insecta.

Through the policies outlined in the two paragraphs preceding it is apparent that *the subject index provides at the same time a complete alphabetical index to the systematic index.* It is thus possible for users of the alphabetical subject index to orient themselves systematically as to both genera and supergeneric groups, thereby facilitating the utilization of systematic information—especially by those who find it difficult to do so when only a systematic approach is available. Furthermore, the user is at once put in touch with related genera and groups and the information recorded concerning them, thereby simplifying the problem of approaching a special problem against a background of broad orientation.

Typography

All generic names are in *italic type* (the only exceptions are new genera and subgenera, which appear in bold-faced capitals); all other first words in rubrics are in ordinary Roman type. This will be found convenient: if the search is for a generic name, all roman type rubrics can be ignored; if the search is for any other subject rubric, all italic names can be passed by automatically.

New genera and subgenera are printed in bold-faced capitals, e.g., **ARENIGOBUS**. Categories below the rank of genus are not indexed in first position, the sole exception being new subgenera.

For reasons of economy the indexing of new taxonomic units below the rank of genus has been greatly curtailed. We have endeavored to lead the user to the desired information in the abstract without duplicating that information in the indexes. Only a few of the new species, varieties, forms, combinations, and reductions to synonymy have been mentioned specifically in the index. If mentioned they are printed as follows:

New species, varieties, etc., appear in lower-case bold-faced type, e.g., Anopheles broussesi, Carex capillaris v. parvirostris.

New specific, varietal, etc., names proposed to replace preoccupied names are printed in lower-case bold-faced type, with the replaced combination following in parentheses and in italic; e.g., Bitoma novella (B. maura). If the preoccupation is the result of transferring a species from one genus to another, thus involving two generic names, the replaced binomial is also entered in first position, in italic, followed in parentheses by the new binomial (the new name appearing in lower-case bold face); e.g., *Corixa dubia (Sigara paivai).*

In new combinations (e.g., transfers of members from one genus to another), the specific name appears in lower-case bold-faced type, followed in parentheses and in italic by the genus from which the member is transferred; e.g., *Anneslia anomala (Inga).* The old combination is also entered in first position, but wholly in italic, followed in parentheses and in italic by the genus to which the transfer is made: *Inga anomala (Anneslia).* If in making the transfer any change in specific, varietal, etc., names is made, the full combinations are given.

In the abstracts new synonyms are preceded by an equality sign and placed in parentheses; the name under which the synonym is sunk precedes, e.g., *Sympronoe parva (Claus) (=S. anomala Shoemaker).*

A dagger (†) associated with a plant or animal name indicates that it is a fossil. The abbreviations in parentheses signify geological periods, as follows:

(Cb) = Carboniferous	(N) = Neogene
(Cm) = Cambrian	(O) = Ordovician
(D) = Devonian	(Pl) = Pleistocene
(E) = Eocene	(Pr) = Permian
(J) = Jurassic	(S) = Silurian
(K) = Cretaceous	(Tr) = Triassic

Some necessary variations from the above will be self-explanatory.

In the abstracts an asterisk (*) attached to a name indicates that the form is illustrated.

THE SYSTEMATIC INDEX

(pp. 1860-1883)

The indexing in the systematic index is limited to those disciplines in which the interest is more or less strongly by systematic groups, notably the taxonomic and morphological. The indexing is confined at present to the following subjects, the references being grouped correspondingly under the abbreviations given in parentheses:

Morphology, including anatomy (MORPH.)	Life History (L. H.)
Histology (HIST.)	Phylogeny (PHYL.)
Cytology (CYT.)	Geographical distribution (DIST.)
Embryology (EMB.)	Bibliography (BIBL.)
	Taxonomy (TAX.)

In departure from the policy of previous years, all taxonomic information, of whatever character—including the description of new species, subspecies, varieties, forms, aberrations, etc., and the publication of new names, new combinations, and new reductions to synonymy (but not including the erection of new genera or of supergeneric groups)—is assembled under the category TAX.

Superspecific entities (subgenera, genera, and higher groups) proposed as new to science are listed by name in bold-faced capitals, e.g., **NOBOLIRA**. New genera appear in alphabetic order among the other genera of the particular group; new subgenera are indented under the corresponding genera; in new supergeneric groups the exact position of the names varies somewhat, depending upon the rank of the group and whether the name is merely indexed or whether utilized by the editor for arranging subordinate groups under it. All new superspecific group names, except genera, are accompanied by a statement of

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the rank assigned to them by the authors, *e.g.*, n. subg., n. ord., etc.

Certain *fossil genera* of very doubtful position, or form genera of broad scope, are omitted from the systematic index; they are, however, included in the subject index.

Geographical distribution (**DIST.**) is in general entered in the systematic index only when treated more or less comprehensively or when data of apparently peculiar interest are presented. Some variation in this policy will be noted. Geographical distribution is, however, indexed fully by groups under geographical and political units in the Geographical Index (see below). This, it is believed, will be found useful because the interest in much recorded distributional information is local. However, by consulting the Geographical Index the student desiring more exhaustive information regarding distribution will be able to assemble easily the desired references.

Papers treating a group (family, order, etc.) more or less comprehensively from some point of view (morphology, taxonomy, cytology, etc.) are frequently indexed under the broader group, though they may also be entered under

individual genera. However, new species, new varieties, new combinations, etc., are invariably referred to under the genera.

Genera are arranged alphabetically under groups, and are therefore easily located. If, on the other hand, the systematic index is consulted for subjects—cytology, embryology, life history, etc.—the distinctive type used for the abbreviations renders the assembling of references from this point of view almost equally simple.

The *systems of classification* used in the various groups are determined by the editors in charge of the respective sections. In general the policy is to use conservative modern classifications; also, to omit intermediate groups, especially subfamilies (a few large families in Lepidoptera being the only exceptions). Since the purpose of the systems here used is chiefly to facilitate the location of desired information, it is believed that the omission of these taxonomic refinements will contribute to, rather than detract from, the utility of the index; furthermore, these refinements are more likely to be fluctuating and controversial, involving changes in successive volumes confusing to the user of the indexes.

GEOGRAPHICAL AND GEOLOGICAL INDEXES

THE GEOGRAPHICAL INDEX

(pp. 1884-1892)

This index is devoted to the indexing of geographical information, particularly the geographical distribution of organisms.

The various geographical areas adopted as units for indexing purposes are grouped under the following major headings: North America, South America, Europe, Africa, Asia, Malay Archipelago, Australasia, Antarctica, Oceanic Islands, and Oceans. The arrangement of the areas under each of these major headings is alphabetical except in the case of North America, where the countries are arranged in a general north-to-south sequence. The subdivisions of any country, such as the provinces of Canada or the separate states of the United States, are arranged alphabetically under that country.

Under each geographical area or unit, organisms are listed by group names arranged alphabetically and corresponding approximately to the systematic sections of current abstract issues; *e.g.*, "Coleoptera," "Fungi," "Mammalia," etc. Items of information pertaining to geographical distribution, but not readily classifiable by systematic groups, are entered in the index above the systematic group names.

A limited amount of indexing is done under the larger geographical units (*e.g.*, West Indies; Europe; Africa, northern), either because the papers in question treat the area more or less comprehensively or because the locality data are not sufficiently specific in the original to permit of more circumscribed allocation.

The names of all geographical areas or units adopted for indexing purposes are printed in their proper places in this index. A few, however, are followed by no abstract numbers; this indicates that the current volume contains no material for indexing under those names.

For indexing purposes, it is a general policy to include coastal islands with near-by mainland countries rather than with oceanic island groups. Likewise coastal waters, up to the 100-fathom line, are generally included with the adjoining mainland. Oceans include adjoining gulfs, bays, and smaller seas. For the most part, only aquatic organisms are indexed under oceans. For abstracts dealing with organisms of a certain kind of distribution, such as coastal fishes (Pisces) or pelagic birds (Aves), references may be given both under an ocean and under a land area.

A dagger (†) preceding an abstract number indicates that the abstract deals with a fossil organism or organisms.

Various letter symbols in parentheses signify *geological periods*, as follows:

(Cb)	= Carboniferous	(N)	= Neogene
(Cm)	= Cambrian	(O)	= Ordovician
(D)	= Devonian	(Pl)	= Pleistocene
(E)	= Eocene	(Pr)	= Permian
(J)	= Jurassic	(S)	= Silurian
(K)	= Cretaceous	(Tr)	= Triassic

Additional information on the distribution of organisms, as far as it pertains to the geological occurrence of fossil species, is indexed in the Geological Index under the names of the geological periods, on page 1893.

Abstract numbers in bold-faced type indicate that new taxonomic concepts (e.g., new species or subspecies) are proposed in the papers referred to.

THE GEOLOGICAL INDEX TO PALEONTOLOGICAL MATERIAL

(p. 1893)

This index is devoted to the indexing of paleontological information on the basis of the geological time scale. The sequence progresses from older to younger strata by eras and periods. Under each period organisms are listed by group names arranged alphabetically and corresponding approximately to the systematic sections of current abstract issues, *e.g.*, "Crustacea," "Gymnospermae," "Mammalia," etc.; the only important exception is represented by "Insecta," the orders of which are not separated. For a detailed systematic approach to paleontological material the Systematic Index (pp. 1860-1883) should be consulted.

A limited amount of indexing is done under the eras, either because the papers in question are more or less comprehensive or because the geological data are not sufficiently specific in the original to permit of allocation to periods.

In general, geographical locations are not included; for a geographical approach to paleontological material, the Geographical Index (pp. 1884-1892) should be consulted.

For an alphabetical approach to fossil forms, the Subject Index (p. 1894 to end) should be consulted.

Abstract numbers in bold-faced type indicate that new taxonomic concepts (e.g., new species or subspecies) are proposed in the papers referred to.

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BRACHIOPODA · BRYOZOA · PHORONIDEA

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LEPTOCARDII · MARSIPOBRANCHII · OSTRACOPHORI · ARTHRODIRA
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(System of classification, in the main, according to Jordan, "A Classification of Fishes", (1923), with modifications from his later works. For Conodonts see under Conodonts in the subject index.)

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Hypsoblennius, TAX., 10625

BATRACHOIDIDAE

APHOS, 12421
Batrachus, TAX., 12421
Nautopaedium, TAX., 12421
Porichthys, TAX., 12421

XENOPTERYGII

GOBIESOCIDAE

Caularchus, DIST., MORPH., 5151

PLECTOGNATHI

CANTHIGASTERIDAE

Canthigaster, DIST., TAX., 8815

PEDICULATI

ANTENNARIIDAE

Antennaria, L. H., MORPH.,
16056

INCERTAE SEDIS

(In Pisces)
Aphelinidinae, TAX., 18048
Canningius, DIST. (D) 3235
Heteromyrus, DIST., TAX., 8815
Lepidoplois, DIST., TAX., 5155

AMPHIBIA

(System of classification according
to Noble, "The Biology of
the Amphibia" (1931).)

CYT., 8919, 11453, 14349;
EMB., 758, 9768, 9778,
11450, 11453; HIST., 9691;
MORPH., 666, 4383, 4387,
5880, 7944, 8003; PHYL.,
5168

LABYRINTHODONTIA

Benthosuchus, MORPH., 16954

PHYLLOSPONDYLI

TAX., (Ob) 18051

BRANCHIOSAURIDAE

Branchiosaurus, TAX., (Ob)
18051

CAUDATA (URODELA)

MORPH., 4398; TAX., 12433

CRYPTOBANCHIDAE

Cryptobanchus, EMB., 8035

AMBYSTOMIDAE

Ambystoma, CYT., 1720, 5296;
EMB., 4373, 4391, 5946,
8040, 11448, 11451, 11454,
13324, 13333, 17035,
17051; HIST., 658, 2472;
MORPH., 658, 679, 743,
744, 745, 749, 755, 2444,
4327, 4336, 7949, 7981,
9686, 11374, 11387

SALAMANDRIDAE

Salamandra, DIST., 12434
Triton, EMB., 5959, 15082,
17058; MORPH., 746, 748,
752, 2444, 10630

Triturus, CYT., 7114; EMB.,
4391, 8046, 13337, 15076,
18058; HIST., 657, 11415;
L. H., 18058; MORPH., 657,
754, 11375, 11426

PROTEIDAE

Necturus, MORPH., 9686, 9695

SALIENTIA (ANURA)

MORPH., 4392

DISCOGLOSSIDAE

Alytes, MORPH., 15014

AMPHIBIA · REPTILIA

Bombina, L. H., MORPH., 12432
Discoglossus, EMB., 5959, 13335

PIPIDAE

Xenopus, MORPH., 11379, 15014

PELOBATIDAE

Pelobates, MORPH., 15014

BUFONIDAE

Bufo, EMB., 8038, 17037; HIST.,
7986, 15022; L. H., 1595;
MORPH., 3396A, 7936,
7963, 15014
Syrhophus, TAX., 5166
Telmatobius, DIST., TAX., 6980

BRACHYCEPHALIDAE

Dendrophryniscus, DIST.,
MORPH., 8820

HYLIDAE

Acris, CYT., 10722
Hyla, CYT., 10722; DIST., TAX.,
6978; EMB., 739, 8045,
13336; HIST., 5884;
MORPH., 758, 15014

RANIDAE

Rana, CYT., 58; DIST., 8397,
10631; EMB., 866, 736,
747, 4385, 9758, 9771,
11448, 13340, 15070;
HIST., 2472, 11397, 11412,
11419, 11420; MORPH.,
660, 742, 3398, 4351, 5896,
6977, 9635, 9686, 9705,
10631, 14997, 15014,
16982

POLYPEDATIDAE

Megalixalus, DIST., TAX., 6979
Rhaconophorus, CYT., 1733; HIST.,
2479

REPTILIA

(Classification of fossils according
to Zittel, "Textbook of Pa-
laeontology," Vol. II (1932).)
DIST., (E) 5225; EMB.,
11444, 15067; HIST.,
11423; MORPH., 4333,
5879, 9676, 9690, 11423,
15011; TAX., 5879, 14289,
14290

THEROMORPHA

CYNOGNATHIDAE

Galesaurus, MORPH., 665

TESTUDINATA

PHYL., 16057

PELOMEDUSIDAE

Sternotherus, EMB., 733

EMYDIDAE

Chrysemys, DIST., 3402

TESTUDINIDAE

Clemmys, DIST., 3402, 12435
Malaclemys, EMB., 15074
Pseudemys, MORPH., 5963,
15012
Testudo, MORPH., 16958

CHELONIDAE

ARCHAEOCHELYS, 16057

SQUAMATA

SAURIA

GEKKONIDAE

Gymnodactylus, TAX., 6988

IGUANIDAE

Anolis, HIST., 5884; MORPH.,
690
Liolaemus, DIST., 6983, 6985,
8823, 10635; MORPH.,
8823; TAX., 5166, 6983,
6984, 6985, 10635, 16059
Phrynosoma, TAX., 18053

SCINCIDAE

Chalcides, DIST., TAX., 10637

TEIIDAE

Ameiva, MORPH., 15000

LACERTIDAE

Acanthodactylus, MORPH., 15000
Lacerta, DIST., 6976; EMB.,
9769; HIST., 713; TAX.,
6976, 6988

GERRHOSAURIDAE

Gerrhosaurus, TAX., 8322

AMPHISBAENIDAE

Rhineura, TAX., (†) 3404

HELODERMATIDAE

Glyptosaurus, TAX., (†) 3404

ANGUIDAE

Gerrhonotus, TAX., 3403
Ophisaurus, MORPH., 15000

INCERTAE SEDIS

(In Sauria)
Harpagosaurus, TAX., (†) 3404
PARAPRIONOSAURUS, (E)
3404
Xestops, TAX., (†) 3404

SERPENTES

LEPTOTYPHILOPIDAE

Leptotyphlops, TAX., 18055

COLUBRIDAE

DIST., L. H., 10633
Leioheterodon, L. H., MORPH.,
3401
Natrix, HIST., 5884
Pituophis, L. H., 7038
Salvadora, L. H., TAX., 6981
Rhadinea, TAX., 10632
Thamnophis, HIST., 5884

BOIGIDAE

Coniophanes, TAX., 10632
Crotaphopeltis, DIST., TAX.,
10636
Erythrolamprus, TAX., 10632

ELAPIDAE

Dendraspis, DIST., L. H., 10633
Micrurus, DIST., TAX., 6982
Naja, DIST., L. H., 10633;
MORPH., 702

VIPERIDAE

Bitis, DIST., L. H., 10633
Vipera, TAX., 6986

THECODONTIA

ORNITHOSUCHIDAE

DIST., TAX., 10634
FARRINGTONIA, 10634

LORICATA

PHOLIDOSAURIDAE

Pholidosaurus, MORPH., 13287

GONIOPHOLIDAE

Goniopholis, MORPH., 13287

ALLIGATORIDAE

MORPH., 16983
Alligator, MORPH., 15012

SAURISCHIA

HALLOPODIDAE

Hallopus, DIST., TAX., (J) 5165

ORNITHISCHIA

TRACHODONTIDAE

MORPH., PHYL., 14291;
Lambeosaurinae, MORPH.,
14291

Prosaurolophus, MORPH., TAX.,
14291
Saurolophus, MORPH., TAX.,
14291

PROTOCRATOPSIDAE
Leptoceratops, DIST., MORPH.,
(†) (K) 18052

CERATOPSIDAE
Brachyceratops, DIST., (K)
18052

NANOSAURIDAE
Nanosaurus, DIST., (J) 5165

AVES

CYT., 7113; DIST., 5180, 5189, 5206, 7025, 10639, 10645, 14293, 16082, 16086, 16087; L. H., 1643, 7025, 10639, 10642, 10645; MORPH., 1643, 7028, 7029, 9676, 11331, 14293, 15004, 15011, 18080; TAX., 5200, 10639, 10645, 12439, 16089, 18080

(Arrangement of orders and families according to Wetmore, "A Systematic Classification for the Birds of the World, Revised and Amended" (1934).)

STRUTHIONIFORMES

STRUTHIONIDAE
Struthio, MORPH., 7931

RHEIFORMES

RHEIDAE
Rhea, MORPH., 7931, 11390

CASUARIIFORMES

CASUARIIDAE
Casuarius, MORPH., 7931

SPHENISCIFORMES

SPHENISCIDAE
Eudyptes, DIST., L. H., MORPH.,
10641; TAX., 7001

GAVIIFORMES

GAVIIDAE
Gavia, L. H., 9064

COLYMBIFORMES (PODICIPEDIFORMES)

COLYMBIDAE
(PODICIPEDIDAE)
L. H., 8844
Colymbus, DIST., 8844; L. H.,
8844, 9064
Podiceps, L. H., 5171

PROCELLARIIFORMES

Thalassidromidae, TAX.,
5182
DIOMEDEIDAE
Diomedea, DIST., 10646; L. H.,
9064, 10646; MORPH., 4369

PROCELLARIIDAE
Fulmarus, L. H., 18084
Pachyptila, MORPH., 5183
Petrodroma, DIST., 5188
Puffinus, DIST., 16090; EMB.,
4384; L. H., 9064

HYDROBATIDAE
Oceanodroma, DIST., 5188

PELECANIFORMES

PHAETHONTIDAE
Phaethon, DIST., 7007
PELECANIDAE
Pelecanus, MORPH., 5196

SULIDAE
Sula, L. H., 163; L. H., 168,
169; TAX., 1651

PHARACROCORACIDAE
Phalacrocorax, L. H., 5201

ANHINGIDAE
Anhinga, DIST., TAX., 7022

CICONIIFORMES

ARDEIDAE
Ardea, DIST., 5191, 14296,
14305; HIST., 4359; L. H.,
9064, 14305
Botaurus, L. H., 5179

THRESKIORNITHIDAE
Ajaja, L. H., 9064

ANSERIFORMES

L. H., 14301, 14302

ANTATIDAE
L. H., 8841, 8844
Anser, L. H., 9064
Arctonetta, DIST., 1644
Branta, DIST., 16088; L. H.,
9064
Cygnus, DIST., 16088; L. H.,
9064; MORPH., 705
Mareca, L. H., 9064
Mergus, DIST., L. H., 5205
Nettion, L. H., 9064
Nyroca, DIST., 9068
Philacte, L. H., 9064
Querquedula, L. H., 10815
Somateria, L. H., 8844

FALCONIFORMES

ACCIPITRIDAE
Accipiter, DIST., 14296, 14306;
TAX., 14306
Buteo, L. H., 9064, 14312
Circus, DIST., L. H., 14292
Haliaeetus, DIST., 8828; L. H.,
9064
Rostrhamus, L. H., 9064
Urubitinga, L. H., 9064
FALCONIDAE
Falco, DIST., 8853, 14296; L. H.,
9064
Herpethotheres, TAX., 1651

GALLIFORMES

DIST., L. H., TAX., 8851
MEGAPODIIDAE
Leipoa, L. H., 18071
Megapodius, TAX., 7014
ORACIDAE
Ortalis, L. H., 9064
TETRAONIDAE
Bonasa, L. H., 3539, 14435,
14436
Canachites, TAX., 16105
Centrocercus, L. H., 9067
Lagopus, DIST., TAX., 8851; L. H.,
8888, 14299
Falcipennis, TAX., 16105

PHASIANIDAE
Afropavo, TAX., 8941
Colinus, L. H., 5230, 9064, 9066
Coturnix, DIST., 5186
Gallus, CYT., 7111; EMB., 699,
788, 4377, 4380, 5945,
5954, 5958, 7984, 8036,
8050, 8052, 9759, 9760,
9762, 9770, 11442, 11443,
13323, 13331, 13332,
15072, 15073, 15080,
17047, 17048; HIST., 656,
5885; MORPH., 757, 759,
5914, 7984, 16974
Lophophorus, TAX., 16077
METALLOPHASIS, N.
SUBG., 16077
Lophortyx, L. H., 1878, 10818
Perdix, L. H., 164
Phasianus, L. H., 1879, 14436
Synoicus, DIST., 5186

GRUIFORMES

TURNICIDAE
Turnix, TAX., 7015
RALLIDAE
L. H., 8841
Amaurornis, DIST., MORPH.,
7022
Coturnicops, DIST., 18059
Megacrex, DIST., TAX., 7022
Rallus, TAX., 7015

OTIDIDAE
Heterotetrax, DIST., TAX., 7023

CHARADRIIFORMES

JACANIDAE
Jacana, TAX., 1651

CHARADRIIDAE
Anarhynchus, DIST., L. H., 5192
Charadrius, TAX., 7015
Chettusia, DIST., L. H., 16073
Squatarola, DIST., L. H., 16073
Thinornis, DIST., 18060
Vanellus, L. H., 9064

SCOLOPACIDAE
L. H., 8841
Actitis, L. H., 10644
Capella, L. H., 10644, 16073
Numenius, DIST., L. H., 16073
Phaeopus, L. H., 9064
Tringa, DIST., 16073

LARIDAE
Chlidonias, DIST., 14300
Larus, EMB., 4383
Sterna, DIST., 8850; EMB.,
4383; L. H., 5413, 8850,
14307; TAX., 7017
ALCIDAE
Aethia, L. H., 9064
Endomychura, DIST., TAX., 5176

COLUMBIFORMES

COLUMBIDAE
Columba, L. H., 9064
Ectopistes, L. H., 9064
Geopelia, DIST., TAX., 7022
Leptotila, L. H., 9064
Ptilinopus, DIST., TAX., 7022
Streptopelia, DIST., L. H., 8848

PSITTACIFORMES

PSITTACIDAE
Conuropsis, L. H., 9064
Purpureicephalus, DIST., MORPH.,
TAX., 5199
Rhynchopsitta, L. H., 9064

CUCULIFORMES

CUCULIDAE
L. H., 8841
Coccyzus, L. H., 9064
Cuculus, L. H., 9064

STRIGIFORMES

TYTONIDAE
Tyto, DIST., 14296
STRIGIDAE
Bubo, DIST., 8853
Cryptoglaux, L. H., 5198
Glauclidium, MORPH., 7035
Otus, DIST., 10651; TAX., 10651,
18061
Strix, DIST., 14296; L. H.,
3536; MORPH., 4328

CAPRIMULGIFORMES

CAPRIMULGIDAE
Nyctidromus, L. H., 9064

MICROPODIFORMES

MICROPODIDAE
Apus, DIST., 14296

TROCHILIDAE
Cyananthus, L. H., 9064
Eugenes, L. H., 9064
Hylocharis, L. H., 9064
Lampornis, L. H., 9064
Selaphorus, L. H., 5193

TROGONIFORMES

TROGONIDAE
Pharomachus, L. H., TAX.,
16063
Trogon, L. H., 9064

CORACIIFORMES

ALCEDINIDAE
Alcedo, DIST., 14296
Ceryle, MORPH., 9775
Halcyon, TAX., 7013
Megaceryle, L. H., 170, 10652
Saurornis, DIST., TAX., 7022
Syma, DIST., TAX., 7022

PICIFORMES

CAPITONIDAE
Cyanops, DIST., TAX., 10638

PICIDAE
Campephilus, L. H., 9064, 12437
Ceophloeus, L. H., 12437
Dryobates, DIST., 7026, 8827;
L. H., 7026, 12437; TAX.,
8827
Sphyrapicus, L. H., 12437

PASSERIFORMES

TAX., 18065, 18073
TYRANNIDAE
Cnemotricus, DIST., TAX., 7036
Empidonax, L. H., 9064
Mitrephanes, DIST., 7036
Myiarchus, DIST., TAX., 7036;
L. H., 9064
Myiodynastes, L. H., 9064
MENURIDAE
Menura, L. H., TAX., 16084
ALAUDIDAE
Anacorys, DIST., TAX., 7023;
L. H., 5197
Calendulauda, DIST., TAX., 7023
Chersomanes, DIST., TAX., 7023
Pseudammodramus, DIST., TAX.,
7023

HIRUNDINIDAE
DIST., L. H., 8831
Hirundo, DIST., 5207, 8845,
14296; L. H., 18074; TAX.,
8845
Petrochelidon, TAX., 1649

DICRURIDAE
Dicrurus, DIST., MORPH., 7022
CORVIDAE
Aphelocoma, TAX., 16100
Corvus, DIST., 14296
Garrulus, DIST., 14296
Pica, DIST., 8837, 14296; TAX.,
8837
Xanthoura, L. H., 9064

PARADISEIDAE
Ailuroedus, DIST., L. H., 5185
Cicinnurus, L. H., 7022
Manucodia, L. H., 7022

PARIDAE
Parus, DIST., 14296
Psaltiriparus, TAX., 1650

SITTIDAE
Sitta, L. H., 7021; TAX., 1642

TIMELIDAE
Aethocichla, DIST., TAX., 7023
Craterocercus, DIST., 7022
ELOGINCLA, 10647
Napothera, DIST., TAX., 10638
Psophodes, L. H., MORPH., 14298

PYCNONOTIDAE
Iole, DIST., TAX., 10647

TROGLODYTIDAE
Troglodytes, DIST., 14296

AVES (Concluded) • MAMMALIA

MIMIDAE
Mimus, DIST., 5178
Toxostoma, L. H., 9064

TURDIDAE
DIST., 8831; L. H., 8831, 8841
Erithacus, DIST., 14296
Hylodichla, DIST., L. H., TAX., 8852
Karrucinclla, DIST., TAX., 7023
Luscinia, DIST., 14296; L. H., 7008
Oenanthe, DIST., 14296; L. H., 9064
Oreocinclla, L. H., 8827
Phoenicuroides, DIST., TAX., 7023
Phoenicurus, DIST., 14296
Saxicola, DIST., 14296
Sialia, L. H., 9064
Turdus, DIST., 8835, 14296; L. H., 8827, 8835, 8841

SYLVIIDAE
Acanthiza, DIST., PHYL., TAX., 5184

Apalis, TAX., 5197
Cisticola, L. H., 5170
Malurus, DIST., L. H., TAX., 10653
Megalur, DIST., 7022
Phylloscopus, DIST., TAX., 18081

REGULIDAE
Lophobasilus, DIST., TAX., 8845

MUSCICAPIDAE
Myiagra, DIST., MORPH., 7022
Petroica, TAX., 7013
Rhipidura, DIST., 7022

PRUNELLIDAE
Prunella, DIST., 14296

MOTACILLIDAE
DIST., L. H., 8831
Anthus, DIST., 7031, 14296; L. H., 7031
Motacilla, DIST., 14296

LANIIDAE
Pachycephala, TAX., 7013

PRIONOPIIDAE
Myiolestes, DIST., 7022

STURNIDAE
Sturnus, DIST., 14296

MELITHREPTIDAE
Meliphaga, DIST., 14294
Myzomela, DIST., L. H., 5169, 5187
Philemon, DIST., L. H., TAX., 10643

NECTARINIIDAE
Anthreptes, L. H., 5195
Arachnothera, DIST., TAX., 10647

VIREONIDAE
Vireo, TAX., 1642

COMPSOTHYLPIIDAE
Protonotaria, L. H., 7032
Vermivora, L. H., 1640

POCEIDAE
Euplectes, L. H., 165
Passer, CYT., 10723; DIST., TAX., 8845; L. H., 8839
Petrionia, DIST., TAX., 8845

ICTERIDAE
Agelaius, TAX., 1641

THRAUPIDAE
Piranga, TAX., 1652

FRINGILLIDAE
DIST., L. H., 8831
Aimophila, L. H., 9064
Carduelis, DIST., 14296
Chloris, DIST., 8846, 14296; L. H., 8846
Fringilla, DIST., 14296; L. H., 8841
Fringillaria, DIST., TAX., 7023
Leucosticte, DIST., 5207
Loxia, DIST., L. H., 8829
Melospiza, L. H., 8840
Passerculus, L. H., 9064; TAX., 16072
Pyrrhula, DIST., 14296
Serinus, DIST., TAX., 7023

INCERTAE SEDIS
(In Passeriformes)
Crithagra, DIST., TAX., 7023
Drymodia, DIST., TAX., 7023

MAMMALIA

DIST., 5212, (E) 5225, (+) 5241, 5242, 7050; EMB., 9764, 11378, 15079; HIST., 5890, 11421, 15040, 16986; L. H., 166, 5212, 5242, 7038; MORPH., 2435, 4311, 4312, 4326, 4333, (Ter) 5241, 5906, 7929, 7940, 7942, 9678, 11378, 13294, 13307, 15011, 15013, 15032, PHYL., 367, 5081, 5249; TAX., (E) 5225, 18091

(Arrangement of orders and families, in the main, according to Simpson, "A New Classification of Mammals" (1931). In the rodentia, families and genera are arranged according to Miller and Gidley, "Synopsis of the Supergeneric Groups of Rodentia" (1918).)

MONOTREMATA

TACHYGLOSSIDAE
Echidna, MORPH., 16973
Tachyglossus, MORPH., 7979
Zaglossus, MORPH., 7979

ORNITHORHYNCHIDAE
Ornithorhynchus, MORPH., 7979

MULTITUBERCULATA

TAENIOLABIDIDAE
Catopsalis, TAX., (E) 18094

MARSUPIALIA

DIDELPHIIDAE
Coona, DIST., TAX., (E) 7054
Didelphis, DIST., 5219, 14312; EMB., 5951, 15071; HIST., 4328; MORPH., 2425, 4328, 11407, 11408, 11409, 16969
Marmosa, MORPH., 2425
Dasypus, CYT., 1719

PANTOLESTIDAE
Aphronorus, DIST., TAX., (E) 5225

CHIROPTERA
EMB., 13328; MORPH., 16108

PTEROPODIDAE
Cynopterus, L. H., 14308

PHYLLOSTOMATIDAE
STURNIOPS, 7041
Uroderma, L. H., 14308

CHILONYCTERIDAE
Chilonycteris, TAX., 12455

VESPERTILIONIDAE
Antrozous, DIST., 5222
Corynorhinus, DIST., 5222; L. H., 5219
Dasypus, L. H., 7038
Eptesicus, L. H., 5244
Euderm, DIST., 7038
Kerivoula, L. H., 14308
Lasius, DIST., 5222; L. H., 5222, 7038; TAX., 18105
Myotis, DIST., 5240, 12458; L. H., 5219, 5244, 12458
Nycticeius, DIST., 7038; TAX., 18105
Pipistrellus, DIST., 5222, 5230; L. H., 5222, 7038

MOLOSSIDAE
Tadarida, DIST., 5219, 5230, 18105; L. H., 7038, 14312

INCERTAE SEDIS
(In Chiroptera)
Aethalops, DIST., TAX., 5209
Tylonycteris, L. H., 14308

681, 682, 684, 687, 706, 707, 708, 709, 2443, 4313, 4330, 5892, 7933, 7938, 7956, 7976, 7985, 9683, 9689, 9706, 11393, 11394, 11399, 11402, 13292, 13293, 13296, 13297, 13300, 13301, 15015, 15033

TAENIODONTA

CONORYCTELLA, (E) 18094

EDENTATA

NEGATHERIIDAE
Nothotherium, L. H., 7048

MYRMECOPHAGIDAE
Myrmecophaga, EMB., 17045

DASYPODIDAE
Dasypus, TAX., 18099

TAMIIDAE
Tamias, DIST., 14310; L. H., 7038, 10654
Tamiastacus, DIST., 5248; L. H., 14312

GEOMYIDAE
L. H., 14309
Geomys, DIST., 3492, 10657; TAX., 5221, 10657
Heterogeomys, DIST., TAX., 10662
Pappogeomys, DIST., TAX., 7040
Platygeomys, DIST., TAX., 7039
Thomomys, TAX., 14309

HETEROMYIDAE
Dipodomys, MORPH., 4353; TAX., 18096
Helicomyus, MORPH., TAX., (E) 18108
Liomys, DIST., TAX., 7042
Perognathus, DIST., 1654, 5229, 10656; L. H., 18086, 14312; 5229, 10656, 14312, 18096, 18102, 18103

INSECTIVORA

SOLENODONTIDAE
Solenodon, MORPH., PHYL., 7051

CHRYSOCHLORIDAE
Chrysochloris, MORPH., 4360

LEPTOTIDAE
Metacoden, TAX., (E) 5216

SORIICIDAE
Blarina, MORPH., 4344, 14312
Cryptotis, DIST., 5243; L. H., 5222, 5240
Microsorex, DIST., 5240; MORPH., 14312
Notosorex, DIST., 7038
Sorex, DIST., 5222, 7038, 8855, 14312; MORPH., 4344; TAX., 8855, 12457, 18088

TALPIDAE
Parascalops, DIST., 5222; L. H., 12446
Scalopus, TAX., 18100
Talpa, MORPH., 4310

MACROSCOLIDAE
Nasillo, MORPH., 5238

PRIMATES
MORPH., 676, 695, 4376, 8012, 11433, 15017

CEBIDAE
Cebus, MORPH., 677, 11402

CERCOPITHECIDAE
Macaca, L. H., 5232; MORPH., 678, 4309, 11401, 15018, 16970, 16975
Rhesus, HIST., 2438
Simia, MORPH., 8007

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